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International Specialists in the Environment

TDD
E2

MEMORANDUM

DATE: March 25, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle JV

FROM: Gloria Skinner, FIT-SM, E&E, Seattle GS

SUBJ: Final Field Operations Work Plan
Widing Transportation, Inc.
Kent, Washington

REF: TDD F10-8706-08

CC: William Glasser, HWD-SM, USEPA, Region X
Thomas Tobin, E&E, Seattle (memo only)
George Brooks, FIT-PM, E&E, Seattle (memo only)

Transmitted herewith are three (3) sets of the revised Widing Transportation Field Operations Work Plan (excluding appendices) incorporating EPA comments. This report will be considered final.

GS:neg

Enclosures

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

Pursuant to U.S. Environmental Protection Agency (EPA) Contract Number 68-01-7347 and Technical Directive Document (TDD) Number F10-8706-08, Ecology and Environment, Inc. (E&E) is conducting a Site Inspection (SI) of the Widing Transportation, Inc. (Widing) Site located near Midway, Washington. As a part of the inspection, samples of soil and ground water will be collected to determine if hazardous compounds from the truck rinsing operation have migrated away from the rinsate lagoon area.

From 1967 to 1986, a small portion of the site was used for tank truck rinse out and truck maintenance. The Washington State Department of Ecology (Ecology) supervised a closure and excavation of the three main rinsate lagoons in 1986. Other portions of the rinse facility and the balance of the site property were not assessed for contaminants by the Ecology lagoon closure project.

The purpose of this investigation is to conduct a screening of area soils and ground water to assess the presence and levels of contaminants which may have originated with the rinse operation. Previous analysis of soil beneath the rinsate lagoons revealed concentrations of bis(2-ethylhexyl) phthalate up to 228 ug/g, exceeding the Ecology acceptable limit of 100 ug/g. Other site soils which were possibly in contact with rinsate or raw chemicals have not been tested, suggesting the need for continued investigation of this facility.

2.0 PROJECT DESCRIPTION

2.1 Objectives and Scope

The objectives of the investigation are to:

- o determine if contaminants previously found in rinsate lagoons are present at other locations on site;
- o determine if contaminants have migrated off site through the surface water runoff or ground-water routes;
- o determine if wastes have been buried on site; and
- o assess the potential of the site to pose a threat to public health or the environment.

To accomplish these objectives the following general field activities will be conducted:

- o composite soil boring samples will be collected from the area of suspected trenches leading off site, the former north and south drainage ditches, and an off-site location to the south;
- o discrete soil samples will be taken from a range of borehole depths in the suspected waste burial area and a former on-site impoundment;

- o a nearby monitoring well will be sampled to assess the possible impact of site contaminants on ground water;

- o background soil and upgradient monitoring well samples will be taken to characterize background conditions; and

- o all samples will be analyzed for the full range of inorganic elements and organic compounds on EPA's Target Compound List (TCL), formerly the Hazardous Substance List (Appendix A).

2.2 Site Location and Description

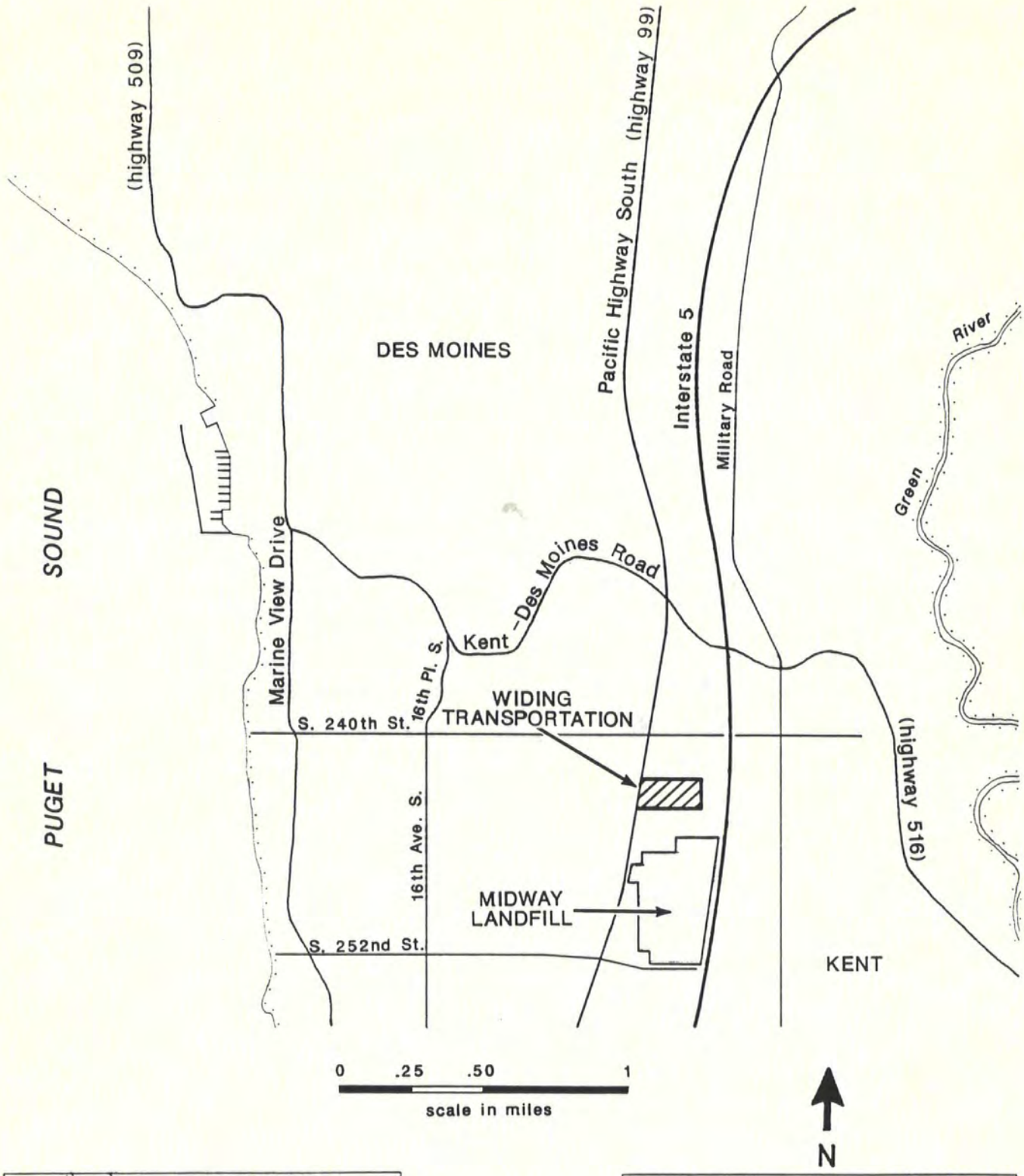
Widing Transportation, Inc., is a former trucking company which operated a truck maintenance and washing facility at 24300 Pacific Highway South, Kent (Midway), Washington, from 1967 to 1986 (Figure 1). The site is located less than one quarter-mile north of Midway Landfill and is adjacent to the Mobile Mansions Trailer Park, consisting of approximately 40 units.

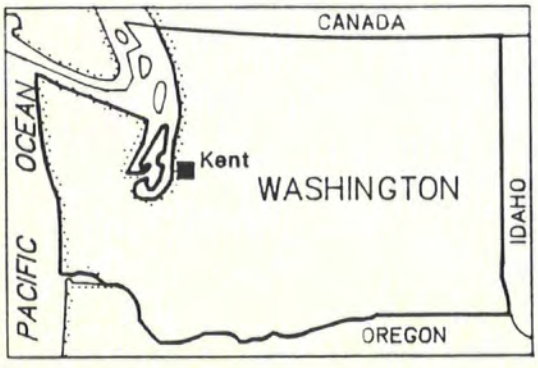
The truck washing facility occupied approximately 1/4 acre of a 9.3-acre quadrangle owned by Widing. The remaining acreage has been leased to other companies owning heavy equipment and trucks. The facility consisted of a single building in which trucks were parked and washed, and three interconnected rinsate lagoons (Figure 2). One of the lagoons was divided into three concrete-lined chambers. The other two lagoons were unlined.

From 1966, and possibly earlier, Widing was authorized by the ICC Operating Authority (Permit #CC-567) to haul chemicals, acids, petroleum products, paper products, and other substances. Chemicals such as raw turpentine, sodium sulfide, toluene, epoxy resin, and other chemicals associated with the pulp and paper industry were rinsed out of trucks at the Midway Site. Rinsate was channeled into the series of three lagoons.

In late 1984, Widing stopped using the lagoons. In 1986, the trucking business was sold, but the Midway site property was retained by Widing stockholders. Between April 1986 and December 1986, the lagoons were closed and excavated under the direction of Ecology. Sludge samples from the bottom of the lagoons were analyzed for over 100 potential contaminants and were determined to be of a hazardous nature due to the presence of phthalate compounds. In particular, bis(2-ethylhexyl)phthalate was found to have migrated downward into the soil beneath the lagoon area. The excavation proceeded until laboratory analysis determined the phthalate level in the soil to be less than 100 ppm. Over 900 tons of contaminated soil and sludge were shipped to a TSD (Treatment, Storage, or Disposal) facility located near Arlington, Oregon. Included in the excavation (but not analyzed) was the sludge storage area north of the lagoons. The depth of soil removal at this location was not specified. The excavated area was filled with Renton-Metro Project clean soil (City of Kent Permit #014421).

Ground water beneath the site was not sampled during the removal. Two boreholes were drilled to 35 feet in the area of the unlined lagoons under the direction of Ecology engineers. After failing to reach water at this depth, both boreholes were sealed (Ecology, 1986).





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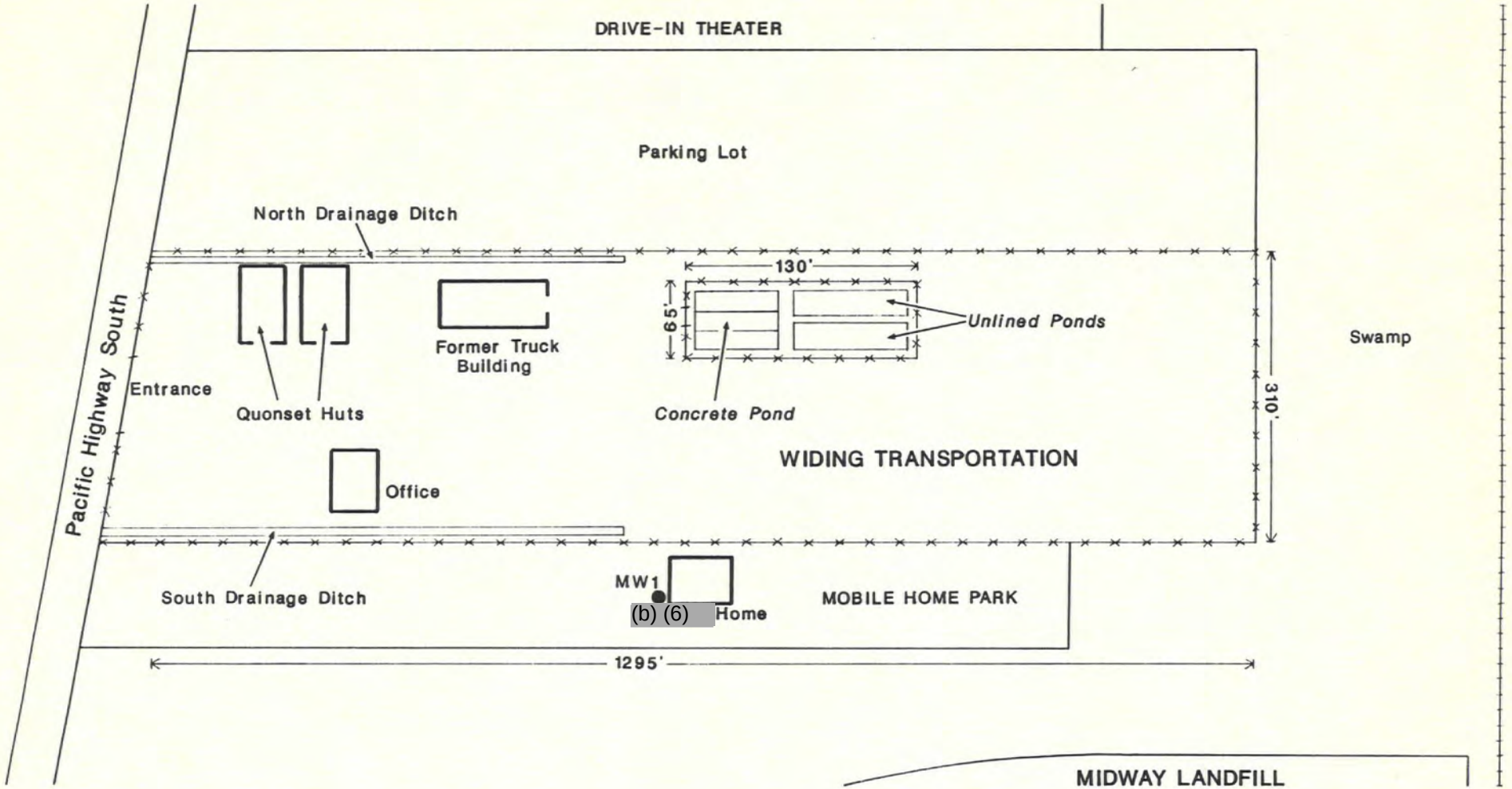
Drawn by: B.T.	Date: Dec. 10, 1987

FIGURE 1
LOCATION MAP
WIDING TRANSPORTATION
Kent, WA



LEGEND

Fence

MW1 Monitoring well

not to scale

N

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Drawn by: B.T.	Date: Dec. 9, 1987

FIGURE 2
SITE MAP CIRCA 1984
WIDING TRANSPORTATION
Kent, WA

Extensive background review of Widing Transportation, Inc. has revealed various inadequacies in the management and disposal of site-generated waste, such as allowing the lagoons to overflow, uncontrolled runoff, air emissions, and improperly processed sludge (Ecology, 1979, 1985; City of Kent, 1969; EPA, 1979; PSAPCA, 1979). Surface water runoff was initially uncontrolled but was later channelled into ditches on the north and south property boundaries which discharged to the west. Runoff on the eastern half of the property continued to flow in an uncontrolled manner, following natural drainage routes at the northeast and southeast corners.

At the time of the initial site reconnaissance in July 1987, the truck wash operation no longer existed (Figure 3). Two quonset huts stood near the northwest corner of the property, immediately north of a small office building. The center of the lot consisted of a driveway covered with gravel. The truck washing building, east of the quonset huts, contained two unoccupied mobile homes. The former location of the three lagoons was marked by a portion of the wooden fence that previously surrounded the lagoons. The ground in the area was compact and covered with gravel. A small metal shed containing bags of dry concrete mix stood to the east of the former lagoon area. To the south and elsewhere on the property were large trucks and heavy equipment, such as cranes and forklifts.

2.3 Data Use

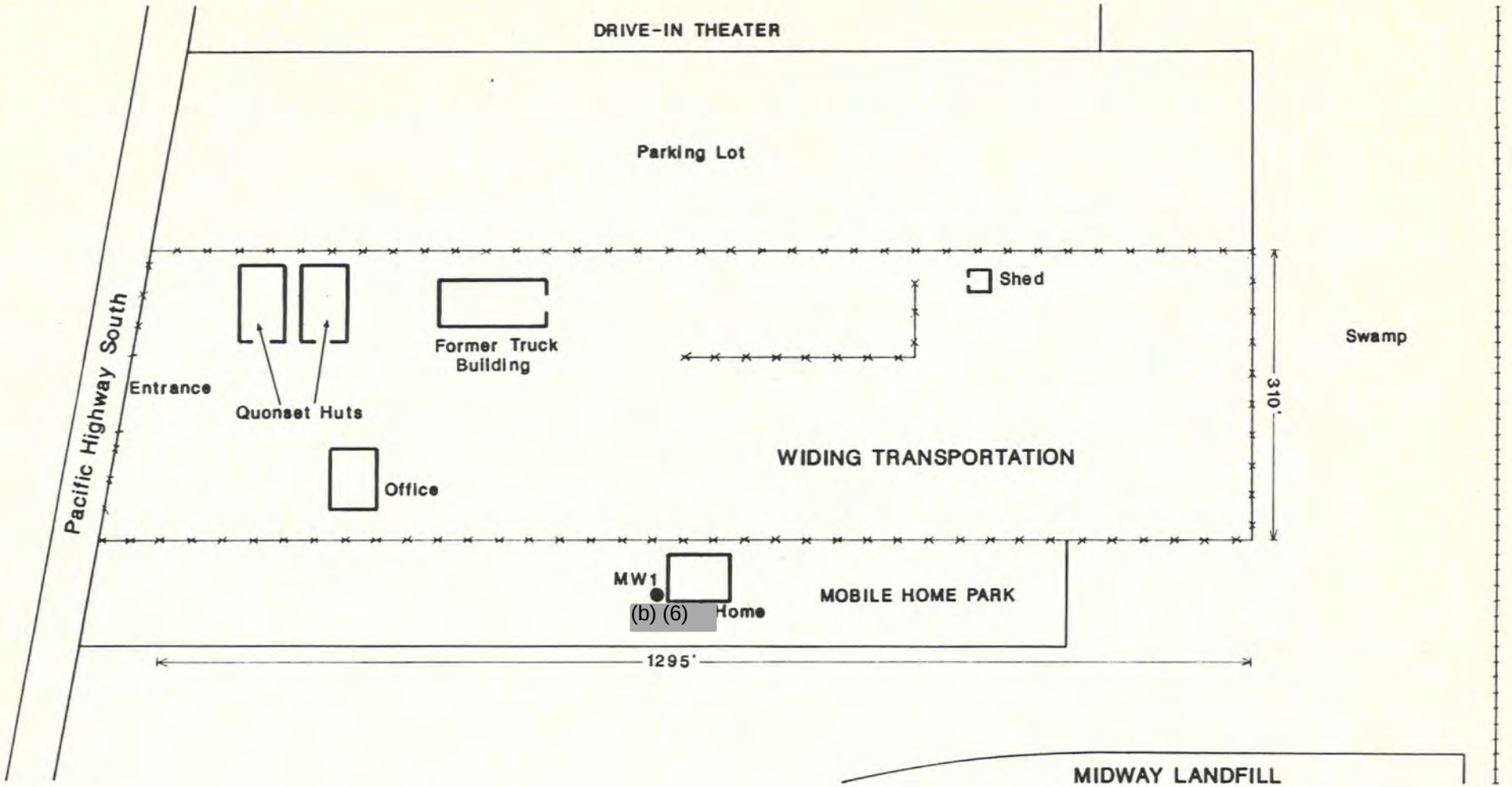
Data gathered during this investigation will be used to determine the presence of contaminants in the soils near the former rinse facility, in former drainage ditches, and in off-site drainage areas. Quantitation of detected compounds will allow an evaluation of environmental or public health threats posed by contaminants potentially remaining on site, or in drainage areas off site.

3.0 PROJECT MANAGEMENT

3.1 Project Organization and Responsibility

The following is a list of the key personnel and their responsibilities:

FIT Office Manager	: Jeffrey Villnow, E&E, Seattle
E&E Project Manager	: George Brooks, E&E, Seattle
E&E Site Manager	: Gloria Skinner, E&E, Seattle
EPA Project Officer	: John Osborn, USEPA, Region X
EPA Site Manager	: William Glasser, USEPA, Region X
EPA QA Officer	: W. Towns, USEPA, Region X
Data Quality Review (EPA)	: Dr. Raleigh Farlow, USEPA, Region X
Data Quality Review (CLP Lab)	: Andrew Hafferty, E&E, Seattle
System Performance Audit	: per REM/FIT Quality Assurance Manual



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LEGEND

Fence

MW1 Monitoring well

not to scale

N

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: B.T.	Date: Dec. 9, 1987

FIGURE 3
SITE MAP CIRCA 1987
WIDING TRANSPORTATION
Kent, WA

3.2 Schedule of Tasks and Milestones

The proposed work schedule for the completion of this site inspection is summarized in the milestone chart presented in Table 1.

TABLE 1

MILESTONE CHART

ACTIVITY	FEB 88				MAR 88				APR 88				MAY 88				JUN 88				JUL 88				AUG 88			
Work Plan/QA Preparation and Review	-	-	-	-	-																							
Field Work Preparation					-	-	-																					
Sample Collection								-	-																			
Analysis of Samples										-	-	-	-	-	-	-												
QA Data																	-	-										
Final Report*													-	-	-	-	-	-	-	-								

*Dependent upon receipt and QA of analytical data

4.0 SAMPLING PROGRAM

4.1 Sample Types, Numbers, and Analytical Requirements

Approximately 16 soil samples and two ground water samples will be collected during the investigation. General sampling information is outlined in Table 2. All samples will be analyzed for inorganic elements and organic compounds on EPA's TCL, which includes heavy metals, base/neutral/acid extractables, pesticides, PCBs, and volatile organic compounds. Background soil and water samples will be taken off site, and duplicate soil and water samples will be submitted to satisfy QA requirements (see Section 5.2.2). Aqueous samples collected for cyanide analyses will be screened in the field for sulfide and oxidizing agents (see Appendix C). An aqueous transport blank will also be submitted for analysis.

TABLE 2

SAMPLE SUMMARY

Sample Description Location	Number of Field Samples	QA/QC Duplicate	Sample Matrix	Sample Type	Analytical Paramters	Sample Depth (feet)
North Drainage Ditch	1	0	Soil	Borehole Composite	TCL Inorganics & Organics	2-5
South Drainage Ditch	1	0	Soil	Borehole Composite	TCL Inorganics & Organics	2-5
Former Impoundment	1	0	Soil	Borehole Grab	TCL Inorganics & Organics	8*
Former Runoff Areas	3	0	Soil	Borehole Composite	TCL Inorganics & Organics	.5-1
Area South of Rinsate Lagoon	8	1	Soil	Borehole Grab	TCL Inorganics & Organics	**5, 10
(b) (6) Yard	1	0	Soil	Borehole Composite	TCL Inorganics & Organics	.5-1
Background Sample	1	0	Soil	Borehole Composite	TCL Inorganics & Organics	2-6
City of Seattle Monitoring Well #1	1	1	Water	Grab	TCL Inorganics & Organics	---
City of Seattle Monitoring Well #12-A	1	0	Water	Grab	TCL Inorganics & Organics	---
Transport Blank	1	0	Water	Grab	TCL Inorganics & Organics	---

* - When native soil is encountered, as identified by the site geologist.

** - Approximate depths - samples will be collected based on lithological changes or obvious presence of waste material.

4.2 Sampling Locations and Rationale

General sample locations are illustrated in Figure 4. Exact sampling locations will be determined using aerial photographs and field observations. Composite soil samples will be collected from:

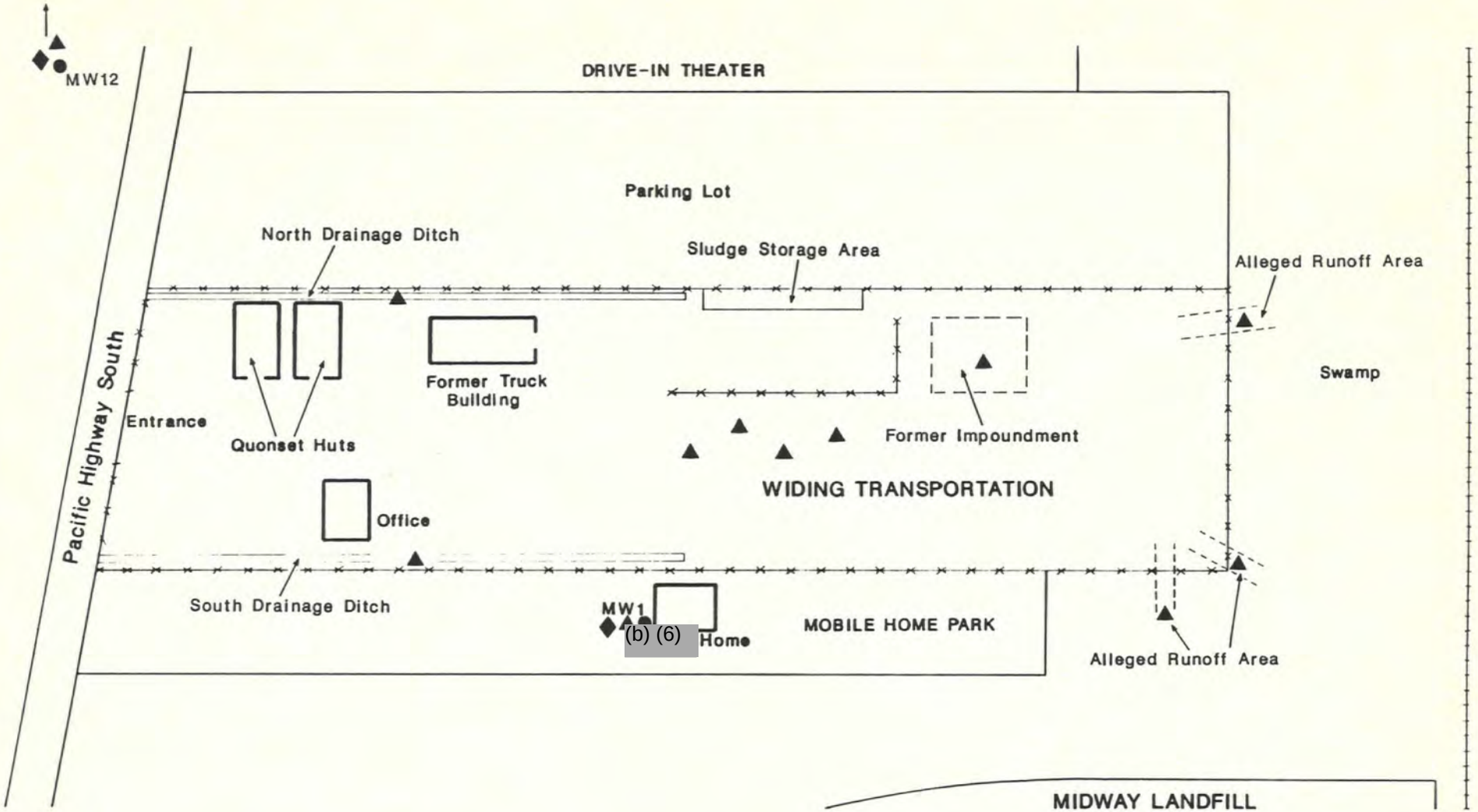
- o former north and south drainage ditch locations;
- o the locations of alleged runoff leading off site to the east and south; and
- o a location north of the site (background).

Soil boring grab samples will be collected from:

- o the area beneath the former surface impoundment; and
- o four locations south of the former rinsate lagoons.

The rationale for sampling at each location is as follows:

- o **North and South Ditches** - Two drainage ditches formerly existed on site to channel surface runoff. Contaminants from the site surface may have been washed into the ditches by runoff and adsorbed to ditch sediments. One spill from the truck rinse operation to the north ditch has been documented. Because the ditches are known to have been shallow (approximately four feet deep), a composite soil sample from depths of three to five feet will be taken from each former ditch site.
- o **Surface Impoundment** - Aerial photographs have revealed a large surface impoundment east of the former rinsate lagoons which was formerly not reported. The function of this impoundment is unknown. Samples will be taken due to its proximity to the lagoons. A soil grab sample from a depth of approximately eight feet (or when native soil is encountered) will be taken to determine if sludge or rinsate contaminants have migrated into the soil beneath this location. If native soil is encountered at shallow depths (two to five feet), a composite sample will be taken in lieu of the grab sample.
- o **Runoff Areas** - Natural drainage routes have been documented at the northeast and southeast corners of the site property. Aerial photographs appear to reveal a road leading off site near the northeast corner which may have been a pathway for surface runoff. The owner of the adjacent eastern property has alleged that chemicals were dumped into a drainage area at the southeast corner leading off site. A third runoff area has been alleged at the southern property boundary, 20 to 30 feet west of the southeast corner. Composite soil samples from all three alleged runoff locations will be taken from depths of six inches to one foot to determine if contaminants have migrated off site following these routes.



LEGEND

- Fence
- MW1 — Monitoring well
- Soil sample location
- Water sample location

not to scale

N

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Job: F10-8706-08	Waste Site: WA 0523
Drawn by: B.T.	Date: Dec. 9, 1987

FIGURE 4
PROPOSED SAMPLE LOCATION MAP

WIDING TRANSPORTATION
Kent, WA

- o (b) (6) **Property** - An off-site composite soil sample will be taken from the (b) (6) property, immediately south of the site. (b) (6) filed complaints about uncontrolled runoff on his property from the Widing facility when it was operational. The purpose of this sample is to determine if site contaminants were carried off site to the (b) (6) property via surface runoff. The sample will be taken from depths of six inches to one foot.

- o **Buried Waste** - It is alleged that Widing Transportation buried sludge from the truck rinsing facility on site, south of the former rinsate lagoons. Four locations will be selected for borehole soil sampling. Two discrete samples from each location will be taken at 5- to 10-foot depths, or at the discretion of the site geologist pending lithological changes. Drilling will be discontinued if hardpan or water is encountered and the borehole will be sealed immediately.

- o **Monitoring Well** - As part of the Midway Landfill Project, the City of Seattle has installed several monitoring wells in the vicinity of Widing Transportation. One of these is on the (b) (6) property, south of the site. Ground water will be sampled from this well for comparison to previous sample results and to further monitor the shallow aquifer for site contaminants.

- o **Background Samples** - A soil borehole will be drilled north of the site to characterize background soil. A composite sample will be taken from two to six feet in depth from this location. A City of Seattle monitoring well northwest of the site (assumed to be background) will also be sampled to provide background values for ground water.

4.3 Sampling Methods

For shallow soil boreholes in runoff areas and the (b) (6) yard (0.5 to 1 foot) a hand driven auger will be used. Samples from the hand auger will exclude soil from the top and bottom two inches of the auger flight to prevent surface soil from being included in the sample. If possible, the sample will be collected directly from the auger flight. A Minute Man portable auger will be used for boreholes up to 12 feet in depth including the drainage ditches, former impoundment, and background sample. The drill utilizes two-inch diameter solid stem auger flights, each of which is approximately three feet in length. Sample material will be collected from the augers directly as they are brought to the surface, if possible. Minute Man auger flights and hand augers will be field decontaminated between sampling locations with a steam cleaner, or by hand using scrub brushes and alconox decontamination solution, and rinsed with carbon-free water. Material from different depths will be collected with a stainless steel spoon and placed in a stainless steel bowl for compositing. Composite samples will be obtained by thoroughly mixing soil samples with the stainless steel spoon in the stainless steel bowl. After mixing, the soil will be evenly spread within the bowl and quartered. The sample will be composed of equal volumes taken from each quarter (5). Upon completion of sampling, each borehole will be sealed with one foot of bentonite and backfilled with the drill cuttings.

The Minute Man auger will also be used for boreholes south of the lagoon area. Discrete grab samples will be taken at approximately 5- to 10-foot depths, or when lithological changes are encountered. A geologist will be present during drilling to identify native soil and lithological changes which may determine exact depths from which samples are taken. Augers will be decontaminated prior to each grab sample taken. Each borehole will be sealed with bentonite as indicated above.

Ground water from two City of Seattle monitoring wells will be sampled, one of which is off the site property to the south and the second of which is to the north (assumed background). Field measurements of water level, pH, conductivity, and temperature will be collected at each well. Monitoring wells will be purged of three volumes of water using a two-inch or four-inch submersible pump. Grab samples will be taken using a dedicated stainless steel bailer at each well.

Sample numbers from CLP Traffic Reports will be placed on each sample container. EPA sample tags will also be attached to each sample container. If samples will be going to the Region X laboratory, sample numbers will be obtained from the USEPA.

4.4 Laboratory Notification

Prior to commencing sampling activities at the site, the Regional Sample Control Center (RSCC) of the USEPA Region X Environmental Services Division (ESD) will designate the laboratory(s) where collected samples are to be sent. E&E will notify either the USEPA Region X laboratory or the designated contract laboratory through the RSCC on the days(s) on which sampling is to occur. The team will confirm the sample documentation numbers, the number of samples to be shipped and the type of analysis to be required.

4.5 Sample Documentation and Handling

The potential evidentiary nature of the data collected during this site investigation requires that the possession of samples be traceable from the time they are collected until they are introduced as evidence in enforcement proceedings.

All sample data (date and time of collection, sample station, field measurements, etc.) will be recorded in a field notebook and on a field documentation form. Sample custody seals will be placed on the front and back of all sample shipping containers (i.e., steel coolers) after the sample containers have been filled. Samples will be accompanied by Region X Field Sample Data Sheets and Chain-of-Custody Sheets, CLP Traffic Report Forms, or any other pertinent shipping/sample documentation information. These forms will be placed in a ziplock bag and taped to the inside of the ice chest. All sample documentation and Chain-of-Custody procedures will be followed as specified in the National Enforcement Investigations Center policy and procedures guidelines (May 1978, Revised June 1985).

All samples will be packed in accordance with National Enforcement Investigations Center guidelines (April 1980). All samples will be shipped according to Department of Transportation (DOT) requirements in 49 CFR Part 172.

Specific sample handling criteria are summarized in Table 3.

TABLE 3

SAMPLE HANDLING SUMMARY

Matrix	Parameter	Maximum Holding Time	Containers	Preservatives	Comments
Soil/ Sediment	TCL Inorganics	6 mos.	1 8-oz wide-mouth glass jar-Teflon Lined Cap	None	
Soil/ Sediment	Mercury	28 days	No extra volume required	None	
Soil/ Sediment	Cyanide	14 days	No extra volume required	None	
Soil/ Sediment	BNA	7 days	1 8-oz wide-mouth glass jar-Teflon Lined Cap	None	
Soil/ Sediment	VOA	14 days	2 120-ml glass wide-mouth vials	None	
Water	TCL Inorganics	6 mos.	1 1-liter polyethylene bottle	None	
Water	Cyanides	14 days	1 1-liter polyethylene bottle		
Water	Mercury	28 days	No extra volume required		
Water	BNA	7 days	2 8-oz amber glass bottles with teflon lined caps	Ice to $4^{o}C$	
Water	VOA	14 days	2 40-ml glass vials with Teflon septa	Ice to $4^{o}C$	

4.6 Investigation-Derived Wastes

Only those wastes considered to be potentially hazardous will be drummed. Unless otherwise directed by the USEPA, all boreholes will be sealed with a 1-foot bentonite plug and backfilled with drill cuttings. Monitoring well purge water will be emptied on site with the owner's permission. Disposable clothing and equipment will be double-bagged and disposed of at a local landfill.

4.7 Personnel Safety and Equipment Decontamination

Personnel safety and decontamination procedures will be addressed in the Field Investigation Team Health and Safety Plan. Sampling equipment decontamination will utilize a consecutive series of the following washes:

- o alconox wash
- o clean water
- o distilled water/carbon-free water rinse

Waste decontamination fluids will be emptied on site with the owner's permission.

5.0 QUALITY ASSURANCE PROCEDURES

5.1 Quality Assurance Objectives

The general quality assurance (QA) objectives for this project are to develop and implement procedures for obtaining and evaluating data that can be used to assess site hazards, develop and evaluate alternate remedial actions, and be legally defensible in a court of law. In order to provide legally defensible data, it is necessary that all measurement data have an appropriate degree of accuracy and reproducibility, along with assurance that samples collected are appropriately representative of actual field conditions.

All collected samples must meet the quality control objectives (i.e., for method, detection limits, precision, accuracy, completeness) for the particular parameter requested (e.g., heavy metals, base/neutral extractables, etc.) as specified by either the Contract Laboratory Program (CLP) or the USEPA Region X laboratory.

Standard Operating Procedures (SOP) have been developed that detail procedures for performing all tests at an acceptable level of quality control. The SOPs also ensure that data is intercomparable, interpretable, and defensible.

5.2 Quality Control and Assurance Procedures

5.2.1 Calibration Procedures and Frequency

All field equipment used during the site investigation will be operated, calibrated, and maintained according to the manufacturers' guidelines and recommendations. Operation, calibration, and maintenance will be per-

formed by personnel who have been properly trained in these procedures. A routine schedule and record of instrument calibration and measurement will be maintained throughout the duration of the sampling program (Table 4).

Preventive maintenance and check procedures for field instrumentation likely to be used during a site investigation sampling are described in Table 4.

TABLE 4

CALIBRATION AND FIELD CHECK FREQUENCY SCHEDULES

Equipment *	Regular Calibration and Maintenance Required (NOTE A)	Laboratory Check Prior to Shipment (NOTE B)	Field Calibration Required Before Each Use (NOTE B)
Explosimeter/ Oxygen Meter	Monthly	X	X
HNU/OVA	Monthly	X	X
Conductivity Meter		X	X
pH Meter		X	X
Water Level Indicator		X	X

* = Equipment routinely used during a site inspection/sampling activities
Note A = To be performed by designated regional instrument repairman
Note B = With the exception of the OVA these calibrations and checks are to be performed by the site field team

5.2.2 Quality Assurance Samples and Frequency

Quality assurance samples for sample collection and laboratory performance will be accomplished by a combination of the following items:

- Duplicate samples: Duplicates will be submitted in order to evaluate field variability. The numbers of duplicate samples required by the field sampling will be at least one in 20 of each sample with the same concentration/matrix type.

- Blank samples: Sample blanks (transfer/transport) will be included in each set of water samples collected during the sampling program. The blanks will consist of either carbon-free water and/or deionized water depending on the analyses required. (Soil sample blanks are not submitted to the laboratory at this time per CLP instructions).

- Laboratory QA: Analytical procedures will be evaluated by using items such as surrogate spikes, matrix spikes, duplicates, reagent blanks, and inter-element correction checks. Triple volumes will be collected for at least one in 20 samples to meet these requirements.

5.3 Data Reduction, Validation, and Reporting

When analytical data/test data have been reduced, the method of reduction will be described in the final site inspection report. Validation of all analytical data will be performed by senior chemists at E&E or at the Region X USEPA laboratory. Laboratories participating in the CLP program will be required to submit results that are supported by sufficient back-up data and QA/QC results to enable the reviewer to conclusively determine the quality of the data. Validity of all data will be determined based on the precision and accuracy assessments required by the USEPA. Upon completion of the review, the senior chemist will be responsible for developing a QA/QC report for each analytical package. All data will be stored and maintained according to standard document control procedures.

All field measurements will be verified by the field team leader and will be recorded in a field notebook for future reference. All analytical data used in the final site inspection report will be appropriately identified and included in a separate appendix within the final report.

5.4 Performance and System Audits

The Regional EPA laboratory or contract laboratory facilities used by E&E personnel will be required to take part in a series of performance and systems audits conducted by the National Enforcement Investigations Center (NEIC). Laboratory Quality Control data and performance evaluations will be submitted along with analytical results for assessment by program reviewers.

Performance and system audits for E&E sampling operations will consist of on-site reviews of field quality assurance systems and equipment for sampling, calibration, and measurement consistent with the Zone II FIT Quality Assurance Manual (Contract No. 68-01-7347). The program Quality Assurance Coordinator will develop and conduct systems audits based on the approved project Field Operations Work Plan. Guidelines provided by the NEIC for performing audits of field activities will be followed.

If for any reason the schedules or procedures cannot be followed, a "Sample Alteration Checklist" form (Appendix B) for each element changed will be completed and this will be reviewed by the Project Manager and the QA Officer/Peer Reviewer.

6.0 REPORTS

The final report for this project will contain a separate narrative section detailing the physical/chemical data collected during the site inspection. In addition, a discussion of the findings as they relate to the general area will also be provided. Conclusions and recommendations will be developed for the site. An EPA 2070-13 form will be included in the final Site Inspection Report.

No separate report is anticipated to describe the performance of the data measurement systems or the data quality for this project. The final Site Inspection Report will contain a separate Quality Assurance Appendix memorandum from the E&E review staff that summarizes data quality information collected during the project. Sampling data will be summarized in tables by E&E using forms for sample documentation and reporting. These data summaries will be included in all reports when applicable.

REFERENCES

1. U.S. Environmental Protection Agency (EPA), 1987, Widing Transportation, Inc. Site File.

2. Ecology and Environment, Inc. (E&E), 1987, Widing Transportation Trip Report, TDD No. F10-8706-08.

3. Washington Department of Ecology, 1987, Widing Transportation, Inc. Site File.

4. Golder Associates, 1985, Record of Borehole MW-1, for Midway Landfill Closure Plan, Seattle Solid Waste Utility.

5. U.S. EPA, 1987, A Compendium of Superfund Field Operations Methods, Vols. 1 & 2.

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_____, 1982, Technical Additions to Methods for Chemical Analysis of Water and Wastes, EPA 600/4-82-055.

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